

Chapter 3: Affected Environment and Environmental Consequences

This chapter describes the environmental resources within the study area, the potential impacts to the environmental resources as a result of the project, and the required mitigation for the resources impacted. The State Route (SR) 92 study area extends along the existing SR-92 corridor, which is situated within a rapidly growing urban corridor inside the incorporated boundaries of Lehi, Cedar Hills, and Highland and the unincorporated areas of Utah County. The terminus for the study area spans from Interstate (I) 15 to the mouth of American Fork Canyon. Figure 3-1 depicts the study area for the project.

3.1 LAND USE

Regulatory Setting

Land use is regulated through zoning by local communities. The Federal Highway Administration's (FHWA's) Technical Advisory T6640.8a, which provides guidance for preparing and processing environmental documents, states that land use should assess the consistency of alternatives with comprehensive development plans.

Affected Environment

Figure 3-2 shows the study area for land use analysis. This area was based on the traffic analysis zones adjacent to the corridor and includes the cities of Highland, Alpine, Cedar Hills, and Lehi.

Current Land Use

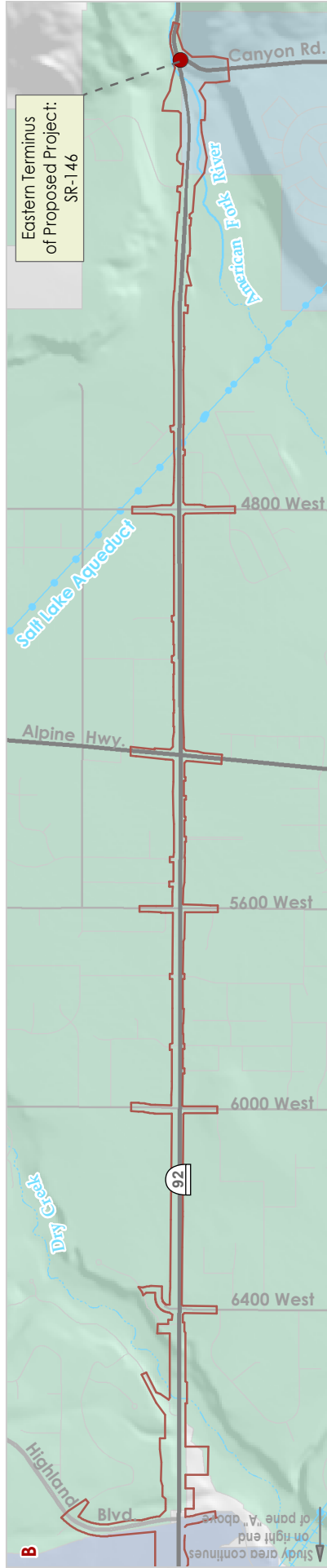
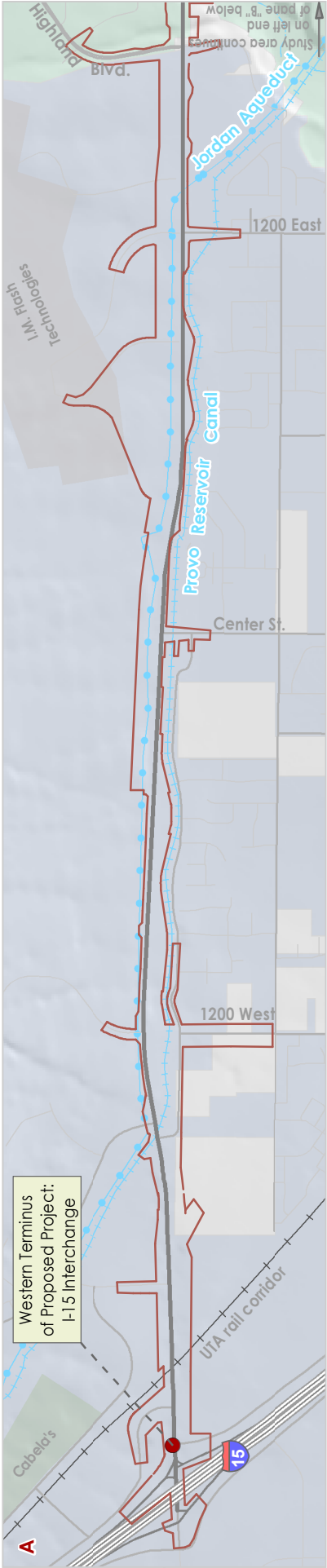
The majority of the land in the study area is residential or undeveloped land. Figure 3-3 shows current land uses along the corridor.

Existing Zoning

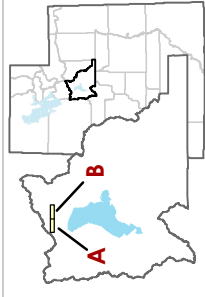
Figure 3-4 shows existing zoning along the corridor. Most of the undeveloped land on the north side of SR-92 is zoned for planned communities and *transitional holding*—a term specific to Lehi City's designation for a large area owned by IM Flash Technologies and Mountain Home Development Corporation, which will allow for both residential and commercial uses.

Future Land Use

Figure 3-5 shows future land use for the corridor as indicated by the various jurisdictions in their adopted future land use maps. The land uses planned for the corridor include mostly residential use, planned community/mixed use, commercial use, or industrial use. Most of the undeveloped land to the north of SR-92 is planned for a mix of residential and commercial use. The remainder of the corridor to the south of SR-92 in Lehi and on both sides of the road towards Highland is dominated by single-family residential use with some commercial use.



Source: H.W. Lochner, AGRC

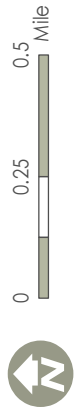


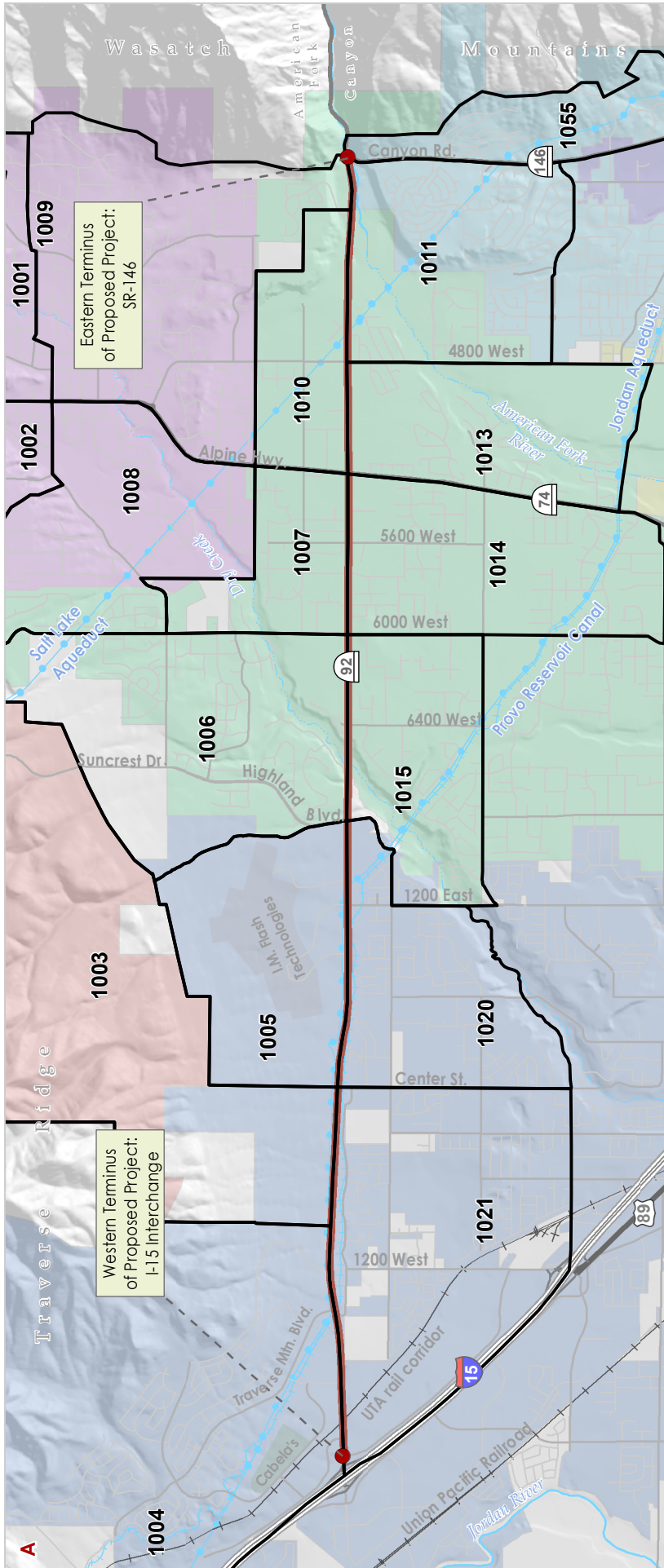
Project Area Context

- Freeway
- Hwy. Entrance
- US Route
- State Road
- Local Arterial
- Residential St.
- Railroads
- Canal
- Tunnel
- Intermt. Stream
- Perenn. Stream
- Aqueduct

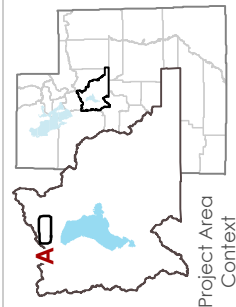
- SR-92 Study Area
- Lehi
- Highland
- Cedar Hills

Figure 3-1
SR-92 Study Area





Source: Mountainland Association of Governments



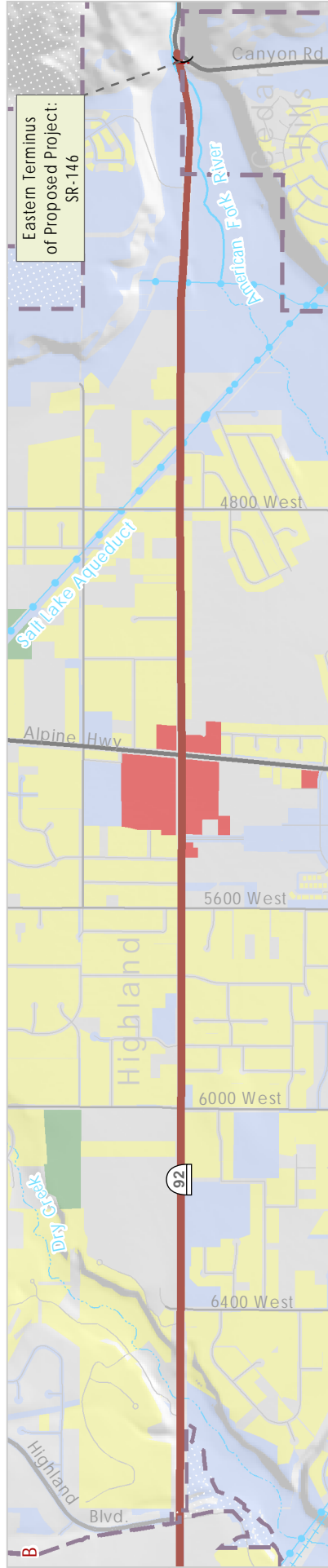
- SR-92 Project
- Freeway
- Hwy. Entrance
- State Road
- Local Arterial
- US Route
- Railroads
- Canal
- Intermt. Stream
- Perenn. Stream
- Tunnel
- Aqueduct

- Traffic Analysis Zones
- Draper
- Alpine
- Lehi
- Highland
- Cedar Hills
- Pleasant Grove
- American Fork



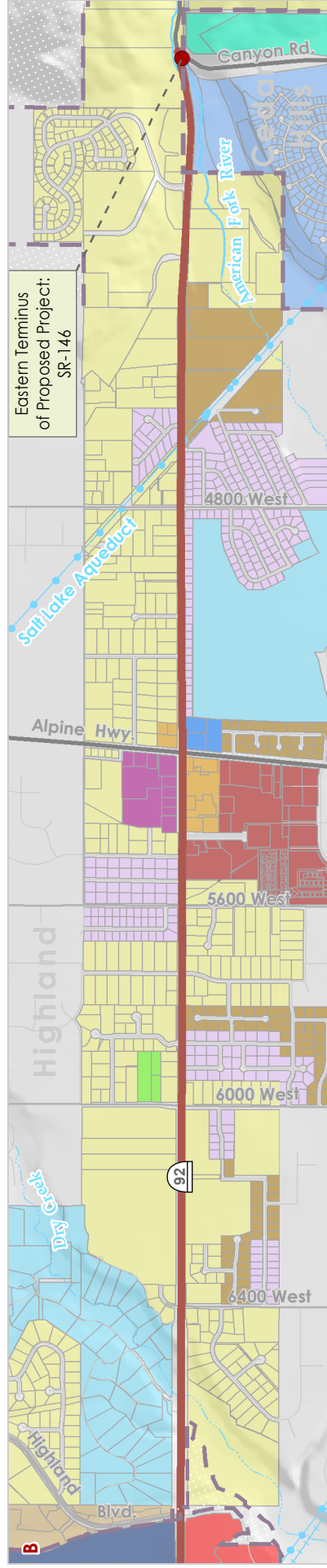
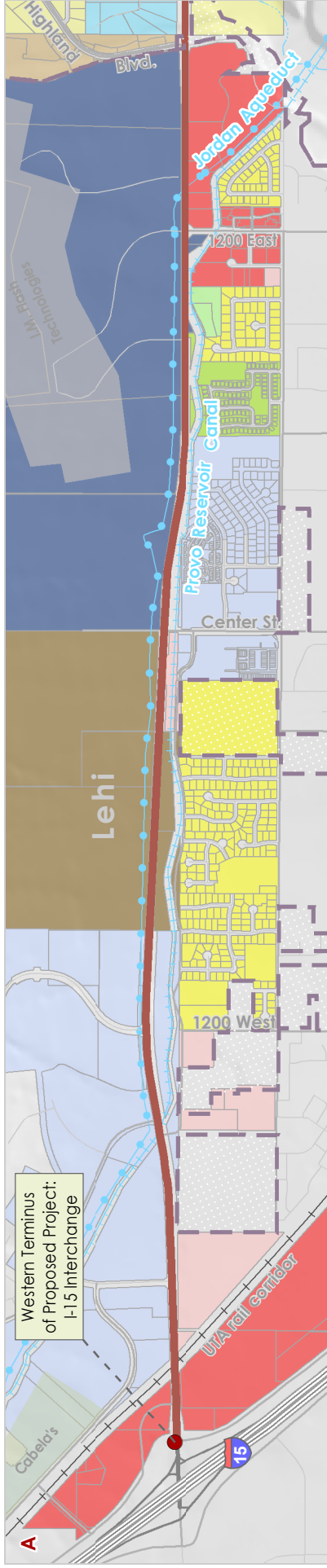
Figure 3-2
Land Use Study Area
Boundaries

SR-92: Lehi - Highland
Environmental Assessment

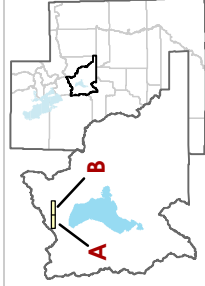


Source: Utah County Assessor Parcel Data (2007), Wikstrom





Source: Utah County Assessor Parcel Data (2007), Wikstrom



Project Area Context

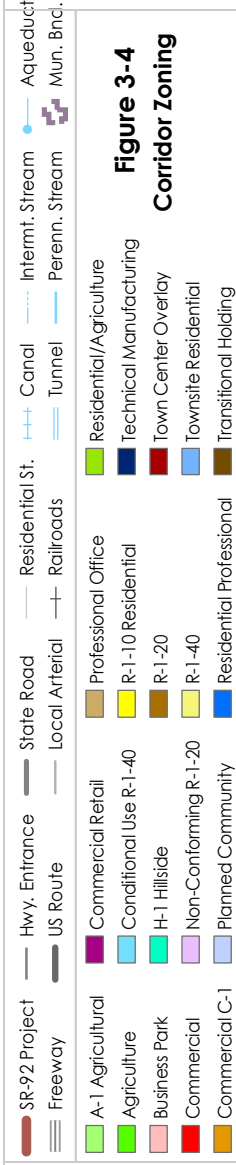
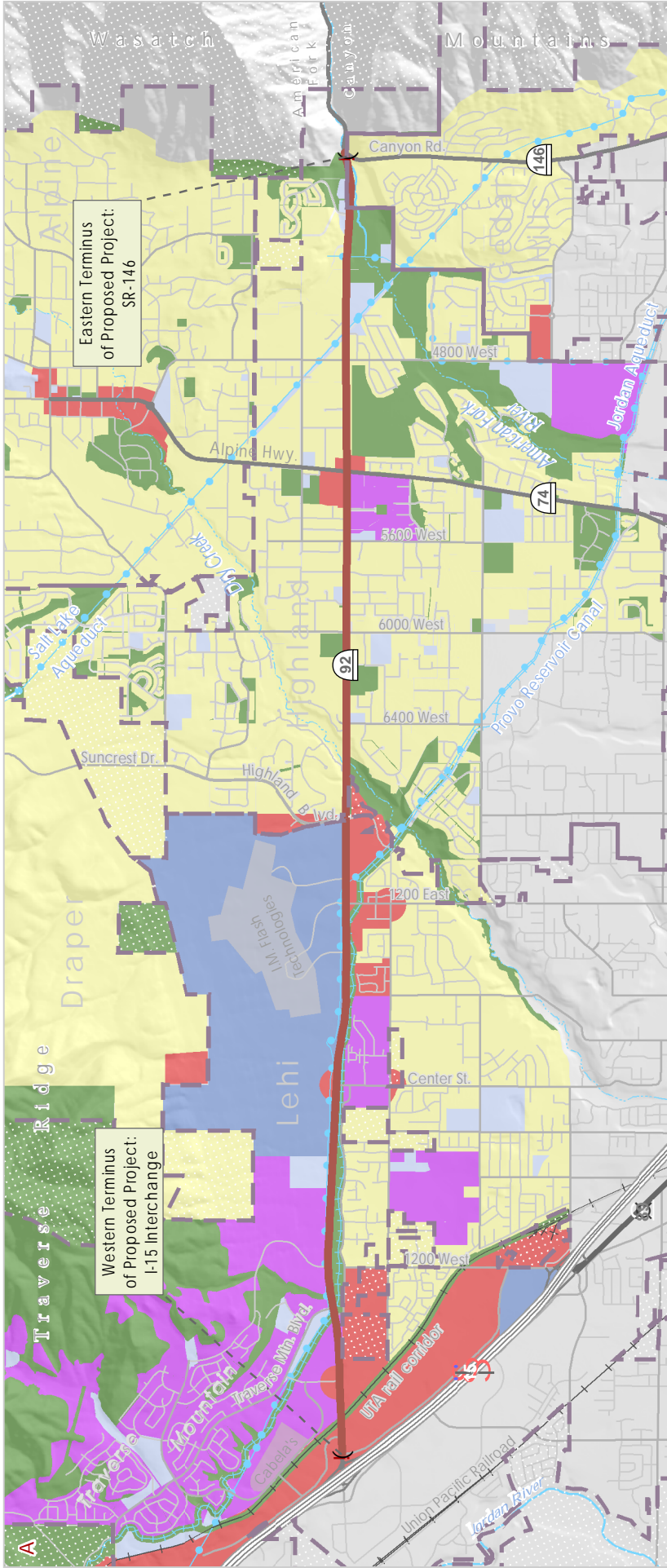


Figure 3-4
Corridor Zoning



SR-92: Lehi - Highland
Environmental Assessment



Source: Jurisdiction General Plans; Wikstrom



Impacts

Transportation improvements could result in changes to land use. Ultimately, the decision for land use change within the SR-92 corridor is controlled by the municipalities. For the purpose of the impact analysis, a negative land use impact would be land use changes that are not consistent with the municipalities' future land use plans.

No-Build Alternative

Under the No-Build Alternative, it is likely that the rate at which land is converted into commercial use would be slower than with the Preferred Alternative. This difference would result from the decreased transportation capacity associated with the No-Build and the increased transportation capacity associated with the Preferred Alternative.

Preferred Alternative

There are two municipalities located directly along the SR-92 corridor: Highland and Lehi. For both of these cities, the impacts to land use resulting from the project would likely be minimal. Both Highland and Lehi's land use plans are consistent with the Preferred Alternative. In both cases, commercial and residential development is ongoing along the corridor and is expected to continue. Generally, commercial land use is designated along high-speed facilities like SR-92. A considerable amount of commercial centers are planned adjacent to the project corridor. Additionally, there is significant pressure for residential land uses along both sides of SR-92. Much of the residential development in this location is new, and some subdivisions are already platted on land designated for residential use. In the case of Lehi, much of the undeveloped land planned for development is located near the freeway access. The main draw for this area is its proximity to the freeway and not necessarily its access to SR-92.

Although the land use changes along the corridor will remain consistent with the cities' future land use plans under both alternatives, the rate at which the land is developed will most likely increase with the Preferred Alternative and decrease with the No-Build Alternative.

Mitigation

Under the Preferred Alternative, land use will remain consistent with the municipalities' future land use plans; therefore mitigation is not necessary.

3.2 FARMLAND

Regulatory Setting

Farmlands have been assessed in accordance with state and federal regulations, including the Federal Farmland Protection Act (Subtitled 1 of Title 15, Section 1539 through 1549 of the Agricultural and Food Act of 1981 [Public Law 97 to 98]) and the Farmland Protection Policy Act or FPPA (7 CFR 658). Both require federal agencies to minimize the conversion of farmland to nonagricultural uses and to protect farmland. For the purpose of the Federal Farmland Protection Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

Affected Environment

Statewide or local important farmlands include the farmland designation *agricultural protection area*. To assess whether or not there are agricultural protection areas within the study area, current land use zoning maps were consulted. Current land use zoning maps for Lehi, Highland,

and the unincorporated areas of Utah County indicate that there are no lands within the study area that meet local farmland protection criteria. Therefore, the 5.2 acres of land that are currently farmed within the study area are not protected under local farmland designations, and no agricultural protection areas are located within the study area.

To assess whether or not there are prime, unique, or statewide important farmlands within the study area, the United States Department of Agriculture (USDA) and Utah County were consulted. The soil units from the USDA soil survey can be used to assign prime, unique, or statewide-important farmland designations. The Soil Survey for Utah County identifies 23 soil-series units within the study area (USDA SCS 1972). Although some of the soil units within the study area have characteristics suitable for prime, unique, or statewide-important farmland, none of the land has been designated. The USDA Natural Resource Conservation Service (NRCS) and Utah County have indicated that there are no prime, unique, or statewide-important designated farmlands in the study area because of the following:

- All undeveloped lands within the incorporated boundaries of Highland and Lehi are planned for future residential and/or commercial development.
- Within the study area, there are no zoned agricultural protection areas. None of the study area's remaining farmland is participating in USDA NRCS farmland conservation programs.
- There are no designated centennial farms within the study area (Domeier 1995; Henline 2003; Domeier 2007).

Impacts

No-Build

No farmland impacts are anticipated as a result of the No-Build Alternative.

Preferred Alternative

The Preferred Alternative would not impact lands designated as prime, unique, statewide-important, or centennial farmlands. However, 5.2 acres of currently farmed land in the study area will be impacted by the project. This land is not federally or state protected but would be acquired as a partial take in accordance with state and federal right-of-way and relocation policies, as described in Section 3.3.2.

Mitigation

Because there are no impacts to prime, unique, statewide-important, or centennial farmlands under the Preferred Alternative, specific mitigation for farmlands is not necessary. Farmland will be acquired for right-of-way in accordance with Title VI of the Civil Rights Act of 1964 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended. Relocation services and benefits will be administered through the Utah Department of Transportation's (UDOT's) Relocation Assistance Program (RAP).

3.3 SOCIAL IMPACTS

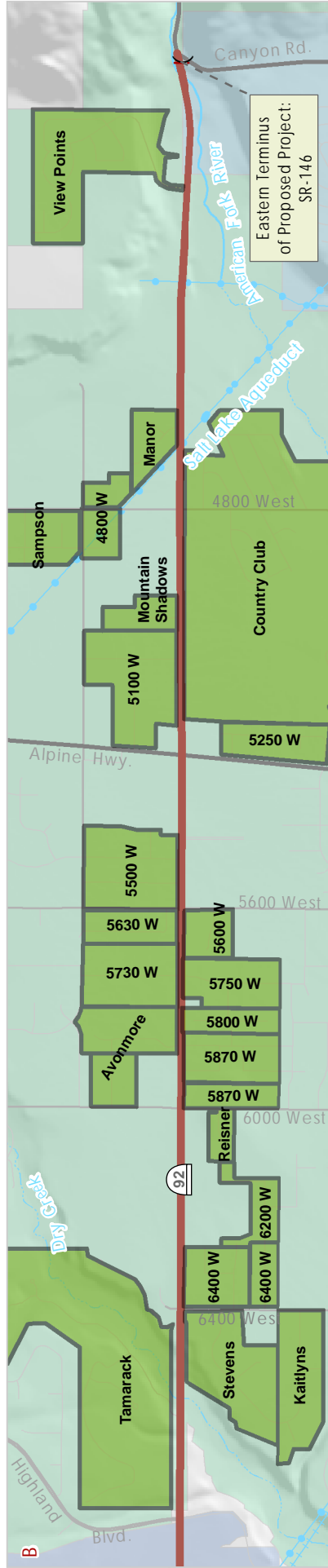
3.3.1 Community Character and Cohesion

Regulatory Setting

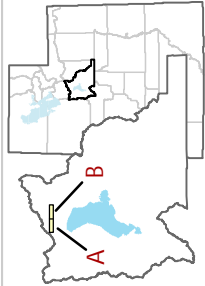
Community character and cohesion is addressed in the county and city zoning and planning documents.

Affected Environment

Unlike the study areas used for assessing other impacts, the study area for assessing community impacts not only includes the cities adjacent to SR-92—Highland, Lehi, and Cedar Hills—but also the nearby city of Alpine. This study area was chosen because it included the subdivisions or neighborhoods that were either adjacent to or very near to the corridor and could therefore be affected by the project. Figure 3-6 shows neighborhoods/subdivisions within the study area.



Source: Utah County Parcel Data, Wikstrom



Project Area Context

- SR-92 Project
- Freeway
- Hwy. Entrance
- State Road
- Local Arterial
- US Route
- Residential St.
- Railroads
- Canal
- Tunnel
- Intermt. Stream
- Perenn. Stream
- Aqueduct

- Lehi
- Highland
- Cedar Hills
- Neighborhoods

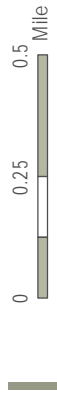


Figure 3-6
Neighborhoods

Community Descriptions

Although each community shown in Figure 3-6 has its own unique characteristics, overall these communities generally exhibit similar demographics. Based on census data, the communities along SR-92 have wage and home price averages that are higher than the rest of Utah County. The majority of the neighborhoods and subdivisions are made up of single-family residential homes in a rural setting.

Based on information gathered from the city and county general plans, the community character for each locality within the study area is described below.

- *The Alpine City General Plan (2007 to 2027)* states, “Preserving the family-oriented, small-town atmosphere is of utmost importance to the residents, business owners, and city officials of Alpine. Citizens have chosen to live in Alpine . . . because of the small-town, rural feel of the city and the stunning beauty of the surrounding mountains. The primary focus of Alpine City is to preserve and maintain these characteristics and its high quality of life.”
- The draft of Highland’s general plan describes Highland as a “large-lot dominated, single-family residential community” with a “generous open-space system and limited public services.”
- *The Cedar Hills General Plan* (revised in 2002) states, “Residents and elected officials . . . would like to see the community maintain a level of individualism and unique community character.”
- *The Lehi City General Plan* (2001) identifies two of Lehi’s main concerns: “The provision of additional open space and park areas and [the] enhanced maintenance of the city’s existing road and streets network with additional traffic management devices.”
- *The Utah County General Plan* states one of its main objectives is to “encourage a pleasant, wholesome neighborhood atmosphere in residential areas.”

Impacts

No-Build Alternative

Under the No-Build Alternative, traffic congestion will increase as the population grows, which is described further in Chapter 1. Inadequate capacity to handle existing and future traffic levels would decrease the accessibility between communities along the roadway.

Preferred Alternative

Major highway projects can be disruptive to communities, especially when a new road is constructed through existing neighborhoods. In this case, the majority of neighborhoods and subdivisions have been built around the existing SR-92 roadway; the roadway has been used to define neighborhood boundaries. These neighborhoods have been developed either to the north or south of SR-92 and do not span the corridor. Therefore, there are no neighborhoods that would be divided as a result of the Preferred Alternative.

The express lanes proposed under the Preferred Alternative will limit access along portions of the roadway. This can result in a loss of connectivity for pedestrians using SR-92. However, pedestrian connectivity would be enhanced at the improved signalized intersections proposed under the Preferred Alternative. Additionally, bicycle connectivity between communities will be enhanced as a result of the Preferred Alternative’s improvements.

Community cohesion could be impacted by construction activities if access to homes or businesses is restricted.

Mitigation

Access to driveways of homes and businesses will be maintained during construction.

3.3.2 Relocations

Regulatory Setting

Relocations for the project will be assessed in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and the State of Utah's relocation policy provided in the Utah Code, Section 57-12: The Utah Relocation Assistance Act. Additionally, UDOT conducts property acquisition in accordance with Title VI of the Civil Rights Act of 1964. Relocation services and benefits will be administered through UDOT's RAP. Relocation resources are available without discrimination to all residents required to relocate because of the project. UDOT will provide comparable replacement housing that is decent, safe, and sanitary and within the financial means of the displaced residents.

Affected Environment

The demographic characteristics of this area have been outlined in Sections 3.3.1, 3.3.5, and 3.4 of this document. Overall, the study area's income and property value averages are higher than the state and county averages. The section of SR-92 near Alpine and in Highland is mostly developed, while the area in Lehi has recently begun development. If relocations are necessary there are a substantial number of comparable real estate developments in northern Utah County.

A comprehensive list of the properties, both commercial and residential, that would be potentially impacted by the project is included in Appendix B. This list includes each property's address, current use, owner, and the amount of land that will be taken.

Impacts

No-Build Alternative

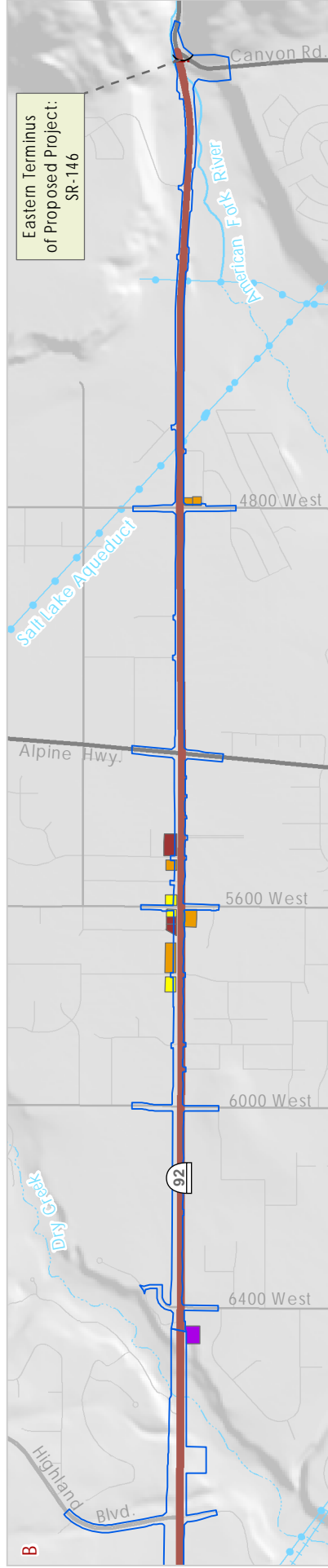
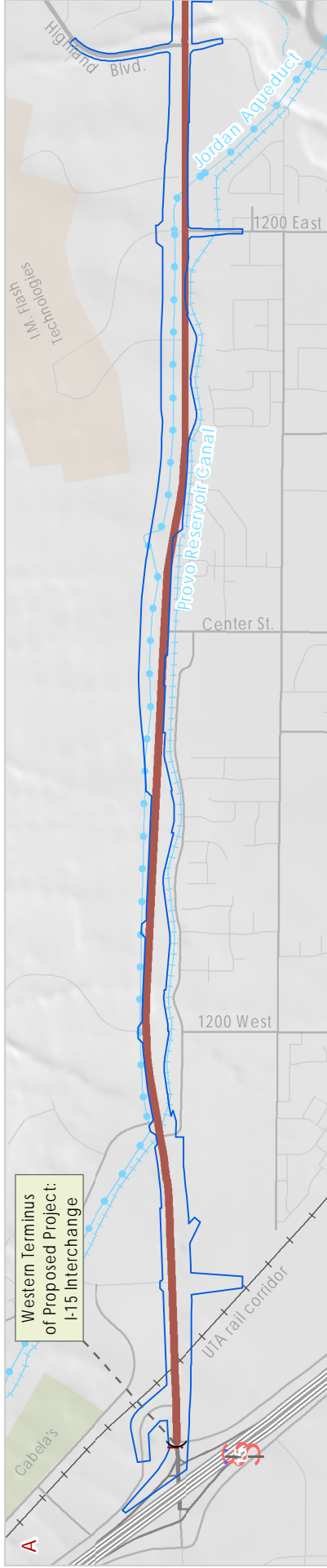
The No-Build Alternative would not require additional property acquisition or the potential relocation of residences or businesses.

Preferred Alternative

To determine property acquisition and potential relocation impacts associated with the project, it was assumed structures located within 15 feet of the project right-of-way line would be relocated. Properties that are located within the right-of-way line but do not have a structure located within 15 feet of the right-of-way line were treated as a strip take. It is estimated that a total of 13 residences (all single-family detached structures) and no businesses would be displaced using the standards described above. The residences to be displaced are shown in Figure 3-7 and described in Table 3-1.

Table 3-1: Relocation Residencies

Serial Number	Property Address	Type	Occupancy (Owner vs. Renter*)
360490017	11019 North 5730 West	Residential Single	Owner
360490018	11026 North 5730 West	Residential Single > 1 Acre	Owner
361570004	5643 West 11030 North	Residential Single	Owner
361570005	5631 West 11030 North	Residential Single	Owner
361570006	11017 North 5600 West	Residential Single	Owner
382220010	5615 West 11000 North	Residential Single	Renter
521250008	11022 North 5600 West	Residential Single	Owner
521240008	11019 North 5550 West	Residential Single	Owner
520830008	11019 North 5500 West	Residential Single	Renter
520830009	11020 North 5500 West	Residential Single > 1 Acre	Renter
340080045	10984 North 4800 West	Residential Single	Owner
340080039	10996 North 4800 West	Residential Single	Owner
110360040	6447 West 11000 North	Residential Single	Not Occupied
*Renter-occupied if mailing address in assessor data differs from property address.			



Source: Wikstrom, H.W. Lochner, Utah County Recorder Parcel Data 2007



Residential Property Acquisitions

The right-of-way for the Preferred Alternative will require 110 residential property acquisitions totaling 5.1 acres. Ninety-seven (97) of the residential property acquisitions are partial takes and 13 are total takes (relocations), as discussed above. Appendix B shows a summary of all properties affected, the amount of acreage that will need to be purchased from each property, and the percentage of the parcel that will need to be taken. The residential properties to be relocated in Table 3-1 are also included in Appendix B.

Partial takings are takings that only buy a small amount of the land instead of the entire parcel, which moves the roadway closer to the residential structure. Issues surrounding residential partial takings relate to the ongoing viability of the parcel for residential use. The current landowner may be willing to put up with the inconvenience, noise, or other disruptions caused by the proximity of the roadway and may feel that the compensation negotiated at the time of the taking was appropriate. While right-of-way is purchased for this project, UDOT and property owners should keep in mind that future land use plans along the corridor do not allow for commercial uses in areas that are currently residential, except in the special case of the property at 9011 West Bullriver Road.

Commercial and Industrial Property Acquisitions

The Preferred Alternative will require acquiring right-of-way from 24 commercial and industrial parcels totaling 21.6 acres, as shown in Appendix B. Partial takings of commercial properties have different issues than the partial takings of residential properties. It is more advantageous for businesses to be closer to the roadway, while most residences prefer to be farther from the corridor. However, partial takings sometimes mean the taking of valuable parking stalls, which can be quite disruptive to business operations. It is anticipated that none of the commercial businesses will lose parking stalls as a result of the Preferred Alternative. In cases where right-of-way landscaping, sidewalk, and grading could encroach on parking, walls will be used as grade separation to allow existing parking stalls to remain.

Other Property Acquisitions

The Preferred Alternatives will require acquiring right-of-way from approximately 110 parcels that are currently either vacant or not classified as residential or commercial. The total acreage to be acquired would be approximately 86.7.

Mitigation

The substantial number of new real estate developments in northern Utah County will facilitate the process of finding homes for those people being relocated. For the small number of relocations, the housing and land market along SR-92 will easily bear the transition of those relocations. RAP, as outlined previously, will be available to all those who wish to use its services. In accordance with the U.S. Civil Rights Act of 1964, this relocation program administers all its services and benefits to displaced people without taking into consideration race, color, national origin, or sex.

UDOT is committed to finding last resort housing if sufficient replacement housing is unavailable. This can include increasing the payment as outlined by statute, remodeling, refurbishing, or building housing on comparable property, or providing loans for additional purchases if necessary.

UDOT will negotiate with property owners who may be interested in relocating to ensure that the property owners' needs are met and that they are satisfied with the outcome of their relocation.

Business impacts should be minimal; however, the project will provide maximum accessibility to businesses along SR-92 during the course of construction to minimize the negative impacts associated with decreased consumer access.

3.3.3 Public Facilities, Services, and Utilities

Regulatory Setting

There are no state or federal regulations pertaining to the protection of public facilities and services.

Utilities are protected under federal law and FHWA regulations in Title 23 of the U.S. Code and in the Code of Federal Regulations (CFR). These laws and regulations govern the way in which utilities may be used in public highway right-of-way and relocated for highway construction.

Affected Environment

The study area for public facilities, services, and utilities is generally defined as all facilities within 500 feet of the existing SR-92 corridor. In some parts of this discussion, the study area is expanded to include the municipalities Alpine, Cedar Hills, Highland, and Lehi. Discussions that apply to the larger study area are indicated.

Existing educational facilities, religious institutions, and medical facilities were identified within the study area and are listed in Table 3-2.

Table 3-2: Existing Facilities

Facility	City	Address
LDS Chapel	Highland	6400 W 11000 N
LDS Chapel	Highland	5848 W 11000 N
LDS Chapel	Highland	4679 W Wasatch Dr
Cemetery	Highland	6250 W 11000 North
Intermountain Health Care Clinic	Highland	10968 N Alpine Hwy
Highland Elementary School	Highland	6000 W 10865 North
LDS Chapel	Highland	6400 W 11000 N
LDS Chapel	Highland	5848 W 11000 N
LDS Chapel	Highland	4679 W Wasatch Dr
Cemetery	Highland	6250 W 11000 North

Additionally, the study area receives fire protection from the Lehi Fire Department and the Lone Peak Fire Department. The Lone Peak Fire Department serves Alpine, Highland, and Cedar Hills and has one station in each of the municipalities it serves. The Lehi Fire Department is all housed in one fire station located in Lehi. None of the fire stations are located within the study area. A map containing the locations of these fire stations is found in Figure 3-8.

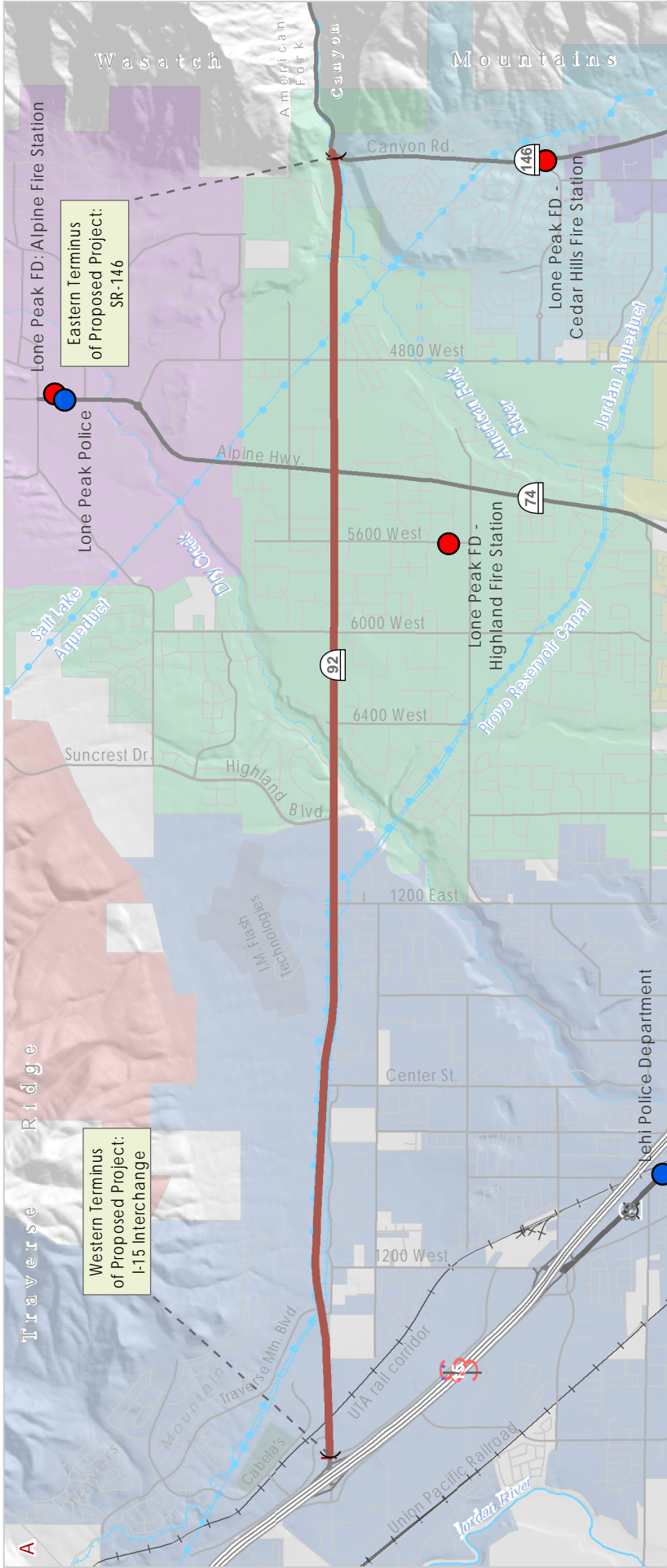
The study area receives police protection from the Lehi Police Department, the Lone Peak Police Department, and the American Fork Police Department, which are all depicted in Figure 3-8. The Lehi Police Department is located in one station based in Lehi. The Lone Peak Police Department

serves both Highland and Alpine and has one station located in Alpine. Cedar Hills is served by the American Fork Police Department, which has one station located in American Fork. None of the police stations are located within the study area.

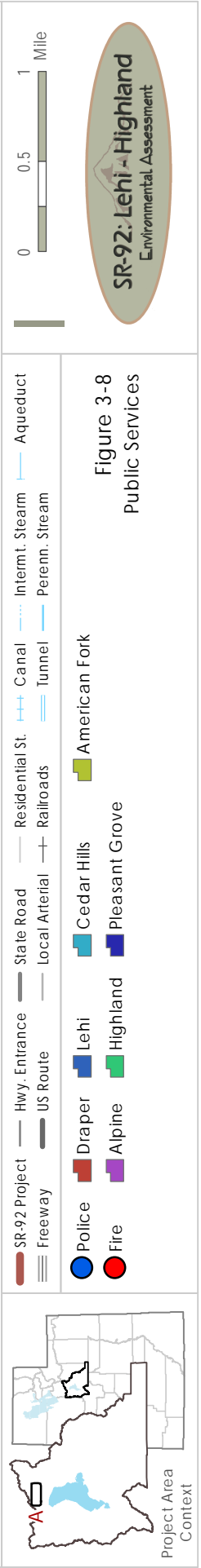
The utility services and the service providers that are currently present within the study area include the following:

- Power: Rocky Mountain Power and Lehi Power
- Gas: Questar
- Telecommunications: Qwest, Comcast, Integra Telecom, XO Communications, Verizon Business, AF City Fiber Optic, American Telephone/Telegraph, Electric Lightwave, and MCI
- Water: Jordan Valley Water Conservancy District (JVWCD), Lehi City, Central Utah Water Conservancy District (CUWCD), Highland City, Metropolitan Water District of Salt Lake and Sandy (MWDSL), and Provo River Water Users Association (PRWUA)
- Sewer: Lehi City, Highland City, and Timpanogos Special Service District (lift station)

Some of the services listed will need to be relocated due to the planned improvements recommended in the preferred alternative. No services will be eliminated.



Source: Wikstrom, AGRC



Impacts

No-Build Alternative

Under the No-Build Alternative, travel time and congestion along SR-92 will increase, which is described further in Chapter 1. Therefore, fire and police response time along SR-92 will likely increase under the No-Build Alternative. Additionally, travel time to and from other facilities, such as the Highland Elementary School, will increase under the No-Build Alternative.

Preferred Alternative

Implementation of the Preferred Alternative will decrease the amount of travel time and congestion along SR-92. The time savings is a positive impact to motorists traveling to and from public facilities and those providing public services along the roadway.

It is likely that construction will cause temporary congestion along SR-92. This will have a negative impact, making it more difficult for emergency services and motorists to reach destinations along SR-92 during construction.

Additionally, with the implementation of the Preferred Alternative, some of the utility services will be relocated. Coordination with the utility service providers will continue through construction of the project.

Mitigation

Due to the potential impacts to public facilities and services during the construction of the Preferred Alternative, recommended mitigation measures include the following:

- Coordinate directly with the utility companies if utility shut-offs or relocations are required; see Table 5-1 for more detail.
- Through the use of websites, mailings, meetings, and/or signage, notify the public, police and fire departments, and school districts of intersection and road construction. Contact information can be found in Table 5-1. Provide notification of alternate routes at least one week prior to lane closures or access restrictions.

3.3.4 Recreational Resources

Regulatory Setting

There are only two regulations, Section 4(f) and Section 6(f), that require federal protection of recreational resources. Section 4(f) resources refer to public lands as defined in Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 (49 USC 303) and is described in Chapter 4 of this document. The intent of the legislation is to protect public lands, parks, recreational areas, wildlife refuges, and historic sites. Section 6(f) of the Land and Water Conservation Fund Act of 1965 (16 USC 4601-4 to 4601-11) mandates protection of all recreational resources that receive funding from this legislation.

Affected Environment

Existing Recreational Resources

A total of three existing recreational resources were identified within the study area and are shown in Figure 3-9. All three of these resources—the Highland Canyon Trail, the Bonneville Shoreline Trail, and the Cedar Hills Golf Course—are protected under Section 4(f) and are further

described in Chapter 4 of this document. Additionally, the recreational trails identified below are also described in Section 3.5 of this chapter.

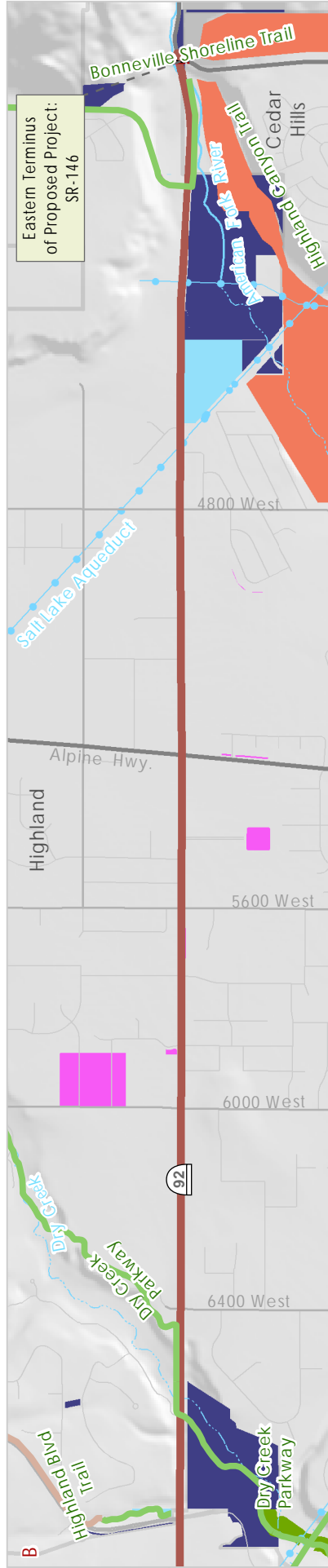
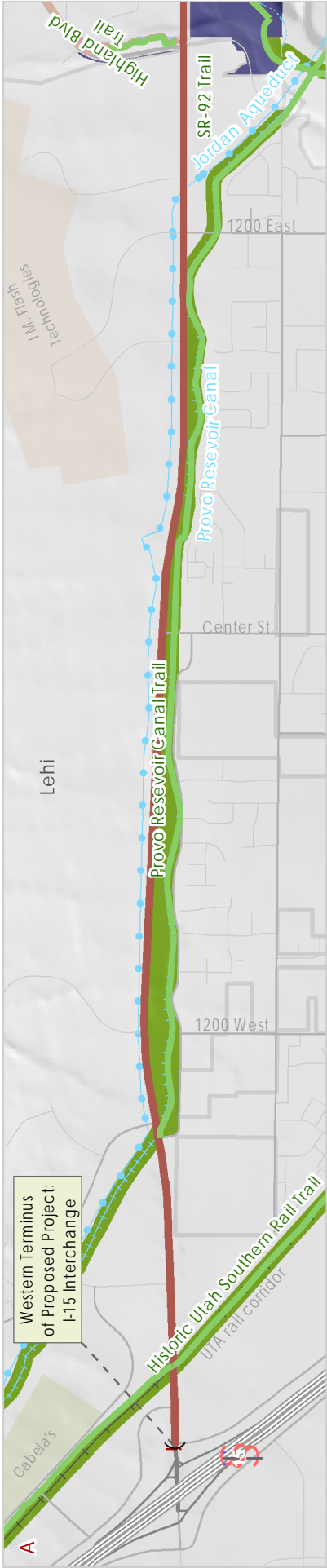
The SR-92 trail, also known as 11000 North Trail, is adjacent to SR-92 from 6400 West to 5300 West. The sidewalk is maintained by Highland City and is used primarily as a sidewalk for transportation use. Because it is used mainly for transportation, it is not listed as a recreational resource.

Planned Recreational Resources

The Highland City Recreation Map and *The Lehi City Park Map* show seven planned recreational resources within the study area. Five of the seven planned resources are publicly owned and require protection under Section 4(f), as further described in Chapter 4 of this document. All of the planned recreational resources are described in Table 3-3 and depicted in Figure 3-9.

Table 3-3: Recreational Resources

Resource Name	Existing or Planned	Description
Highland Canyon Trail	Existing	Paved pedestrian/bike trail extending south from the SR-92 and SR-146 intersection to 4800 West. Owned by the City of Cedar Hills and used for recreational use.
Bonneville Shoreline Trail (Cedar Hills Parkway)	Existing	Paved pedestrian/bike trail along SR-146. Owned by the City of Cedar Hills and UDOT and used for recreational use.
Cedar Hills Golf Course	Existing	18-hole golf course owned and managed by the City of Cedar Hills.
Historic Utah Southern Rail Trail	Planned	Recreational trail that will follow the existing Utah Southern/Union Pacific Railroad corridor. Will be managed by Lehi City.
Provo Reservoir Canal Trail	Planned	Recreational trail that will extend along the Provo Reservoir Canal through Lehi and Highland City and will be publically owned.
Dry Creek Parkway	Planned	Recreational trail that will follow the Dry Creek drainage located on lands owned by Highland City.
Bonneville Shoreline Trail	Planned	Recreational trail that will extend along the foothills adjacent to SR-92. Will be located on lands owned by Highland City and the City of Cedar Hills.
Highland Boulevard Trail	Planned	Recreational trail that will extend to the south of SR-92.
Proposed Park	Planned	Highland City park that will be located near the east end of the SR-92 project corridor and is in concept only. Has no specific plans/designs or designation of funds.
Salt Lake Aqueduct Trail	Planned	Trail that will follow the Salt Lake Aqueduct corridor. However, conceptual with no specific design plans or designation of funds for construction.



Source: Lehi City General Plan Land Use Map, Lehi City Parks Map, Lehi City Trails Plan, Highland City General Plan



Impacts

No-Build Alternative

The No-Build Alternative would not include the proposed improvements to recreational resources as compared to the Preferred Alternative.

Preferred Alternative

The Preferred Alternative would temporarily impact three recreational resources identified within the study area:

- The Highland Canyon Trail
- The Bonneville Shoreline Trail (also known as Cedar Hills Parkway)
- The Cedar Hills Golf Course

These three resources are protected under Section 4(f), and their use and mitigation is described in detail in Chapter 4. Temporary impacts to the Cedar Hills Golf Course include the realignment of a golf cart path; temporary impacts to the Highland Canyon Trail and Bonneville Shoreline Trail also include realignment, as described in Table 4-6. All impacts will be temporary in nature, and access will be maintained during construction by creating a temporary detour.

The Preferred Alternative proposes three grade-separated crossings to accommodate the Bonneville Shoreline Trail, the Dry Creek Parkway, and the Highland Boulevard Trail. The grade-separated crossings would improve the connectivity of the recreational resources within the study area, as discussed in Section 3.5. The locations of these grade-separated crossings are shown on Figure 3-12. Please note that these crossings may require construction phasing if funding for the improvement is not available all at once.

Mitigation

The Cedar Hills Golf Course's golf cart path, the Highland Canyon Trail, and the Bonneville Shoreline Trail will be realigned. The width and character of each will be re-established, and connectivity will be maintained, as described in Table 4-6. All impacts will be temporary in nature, and a temporary detour will be developed so that access can be maintained during construction.

The Preferred Alternative proposes grade-separated crossings at the Bonneville Shoreline Trail, the Dry Creek Parkway, and the Highland Boulevard Trail, as discussed in Section 3.5 and shown on Figure 3-12. Please note that these crossings may require construction phasing if funding for the improvement is not available all at once.

3.3.5 Environmental Justice Populations

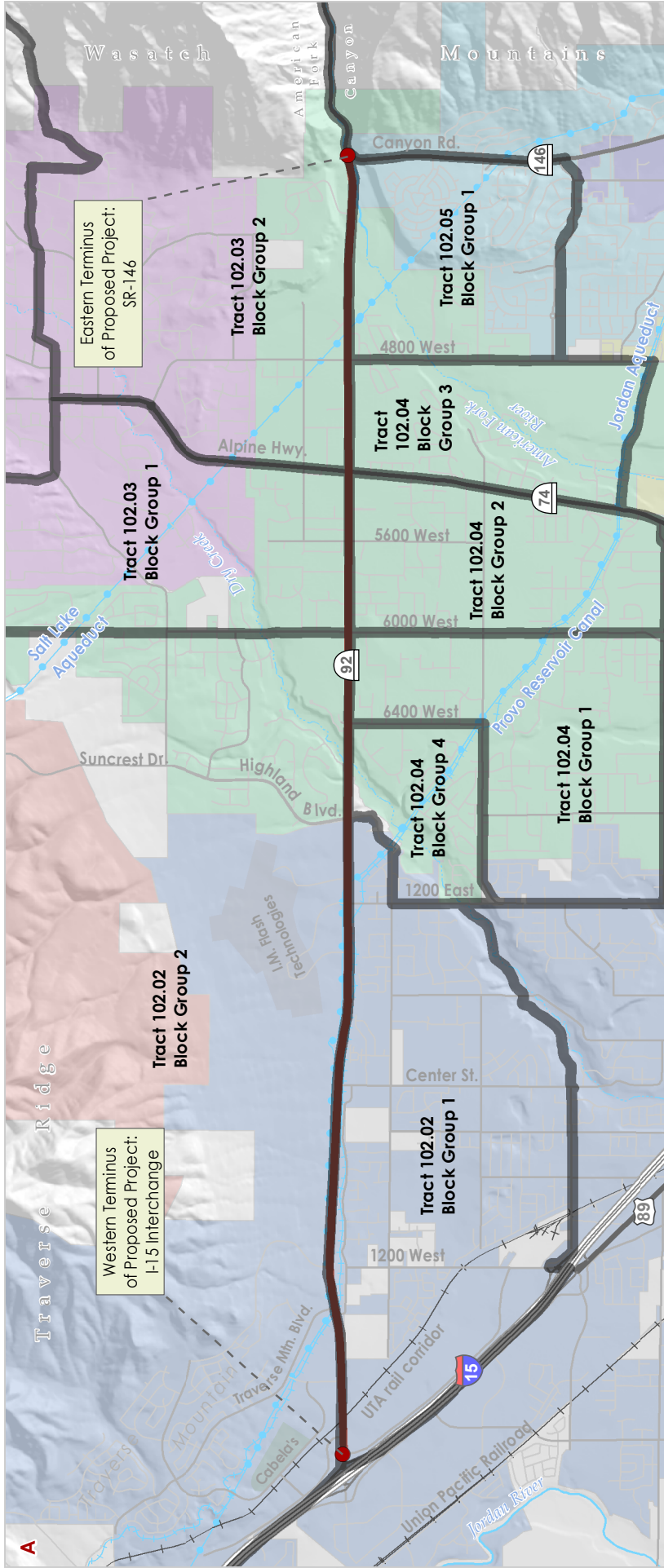
Regulatory Setting

Environmental justice impacts have been assessed in accordance with FHWA guidance. This guidance establishes procedures for federally funded transportation projects to ensure they comply with Executive Order (EO) 12898 Federal Actions to Address Environmental Justice to Minority Populations and Low-Income Populations. This EO requires federal agencies to consider impacts to minority and low-income populations as part of environmental analyses to avoid a disproportionately high number of adverse or human health impacts on these populations as a result of a federally funded project.

Disproportionately high adverse effects describe any impact that is predominately borne by low-income or minority populations or any impact that would be felt in a way by these populations that is considerably greater or more severe than the remainder of the population. To assess the potential for environmental justice impacts for the project, minority and low-income populations were identified within the study area using census block data. These populations in the study area were then compared to the total low-income and minority populations within other sections of the study area, Utah County, and the State of Utah.

Affected Environment

The study area for environmental justice populations is the nine census block groups adjacent to the study corridor. These nine block groups are depicted in Figure 3-10 and include the cities of Lehi, Highland, Alpine, and Cedar Hills.



Source: 2000 Census, AGRC

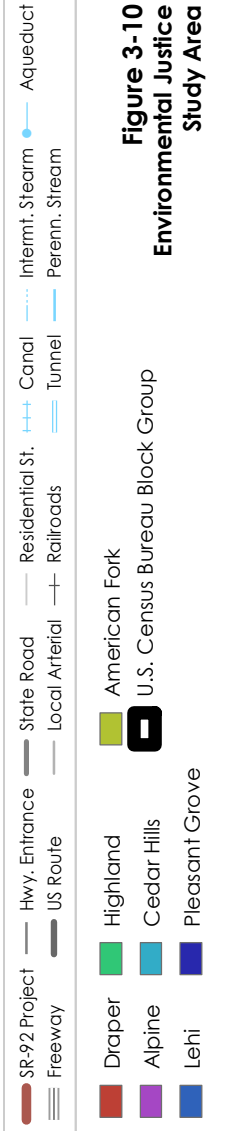
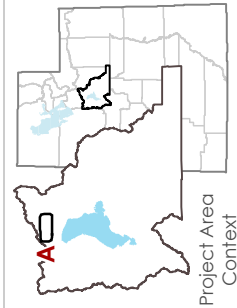


Figure 3-10
Environmental Justice
Study Area

SR-92: Lehi-Highland
Environmental Assessment

Low-Income Population

USDOT defines low-income groups as people whose household income is below the Department of Health and Human Services' (DHHS's) poverty guideline. The DHHS poverty threshold for a family of four in 2007 was \$20,650. In this section, all monetary values taken from the 2000 U.S. Census have been inflated to 2007 dollars using inflation statistics provided by the Bureau of Labor Statistics (BLS).

Table 3-4 shows the average median household income for the nine census block groups, the study area, Utah County, and the State of Utah. The median household income for the block groups ranged from \$75,320 to \$156,918 (U.S. Census Bureau 2000). Overall, each of the analyzed block groups has a higher household income than that of the county or the state and is well above the DHHS poverty thresholds.

Table 3-4: Low-Income Populations

Area/Tract	Block Group	Median Household Income (2007 Dollars)
102.02	1	\$75,320
102.02	2	\$156,918
102.03	1	\$98,292
102.03	2	\$98,169
102.04	1	\$86,695
102.04	2	\$95,978
102.04	3	\$115,743
102.04	4	\$103,577
102.05	1	\$85,105
Study Area	N/A	\$93,575
Utah County	N/A	\$57,305
State of Utah	N/A	\$57,171

Source: Census 2000; Wikstrom

Minority Populations

For the purpose of this analysis, minority is defined as an individual or racial/ethnic group that is categorized as not White and follows the racial classification used by the U.S. Census Bureau. As presented in Table 3-5, U.S. Census Bureau data shows that the study area is comprised of 4.2 percent minorities and has a smaller percentage of minorities than the county and the state as a whole. The range of minorities by block group is between 2.8 and 6.8 percent, which is considerably lower than the county-wide average of 11.4 percent (U.S. Census Bureau 2000).

Table 3-5: Minority Populations

Tract	Block Group	Percent Minority
102.02	1	6.8%
102.02	2	5.1%
102.03	1	3.9%
102.03	2	3.4%
102.04	1	2.8%
102.04	2	3.5%
102.04	3	3.7%
102.04	4	5.8%
102.05	1	4.1%
Study Area	N/A	4.2%
Utah County	N/A	11.4%
State of Utah	N/A	15.4%

Source: Census 2000; Wikstrom

Impacts

Within the study area, no minority or low-income populations were identified in concentrations greater than those found in Utah County or the State of Utah. Therefore, neither the Preferred Alternative nor the No-Build Alternative would have a disproportionately high or adverse effect on these populations.

Mitigation

Since no minority or low-income populations would be subjected to disproportionately high and adverse effects by the proposed project, no mitigation is required.

3.4 ECONOMICS

Regulatory Setting

In accordance with 23 United States Code (USC) 109(h) and the Council on Environmental Quality (CEQ) regulation, 40 CFR 1508.14, the economic impact of the project has been assessed.

Affected Environment

Because the project would not only influence economic conditions in, near, or adjacent to the study area, an expanded study area was used. The study area utilized for the economic analysis included a 500-foot wide corridor, measured from the centerline of the existing SR-92 corridor, and the surrounding cities of Highland, Lehi, Alpine, and Cedar Hills.

The population growth projections for Highland and Lehi continue to outpace statewide and county averages, while the population growth for Alpine and Cedar Hills remain generally consistent with state and county averages. Tables 3-6 and 3-7 provide the population projections and the median household income for the study area.

Table 3-6: Population Projections

Location	2005	2010	2020	2030	AARG*
Alpine	9,061	10,742	13,022	15,205	2.1%
Cedar Hills	7,843	10,298	11,501	12,280	1.8%
Highland	13,303	18,055	22,654	24,524	2.5%
Lehi	30,088	40,423	62,516	77,064	3.6%
Utah County	453,977	527,302	661,319	804,112	2.4%
State of Utah	2,528,926	2,833,337	3,486,218	4,086,319	1.9%
Source: MAG, GOPB					
*AARG: Average annual rate of growth calculated from 2005 – 2030.					

Table 3-7: Population and Median Household Income

Location	2005 Population	Median Household Income (2007 Dollars)	Median Home Value
Alpine City	9,063	\$89,897	\$364,251
Cedar Hills	7,790	\$77,324	\$242,998
Highland City	13,350	\$98,745	\$307,756
Lehi City	31,730	\$65,410	\$183,050
Utah County	443,738	\$56,534	\$189,465
State of Utah	2,547,389	\$56,402	\$175,896
Source: GOPB, 2002 Census inflated to 2007 based on CPI			

In addition to the population growth projections for the four localities—Highland, Lehi, Alpine, and Cedar Hills—several major employment and development centers are located and planned within the study area. Employers were identified using a 500-foot wide corridor, measured from the centerline of the existing SR-92 corridor. The largest employer in the area is IM Flash Technologies, which began operations in early 2007 and employs between 1500 and 1999 persons. Kohlco, Inc. is a major retailer in the area and employs up to 250 persons. Cabela's, although not located within the 500-foot wide corridor, is also a major retailer in close proximity to the project and employs up to 500 persons. Table 3-8 details the types of businesses identified within the study area and the number of persons employed for each business type.

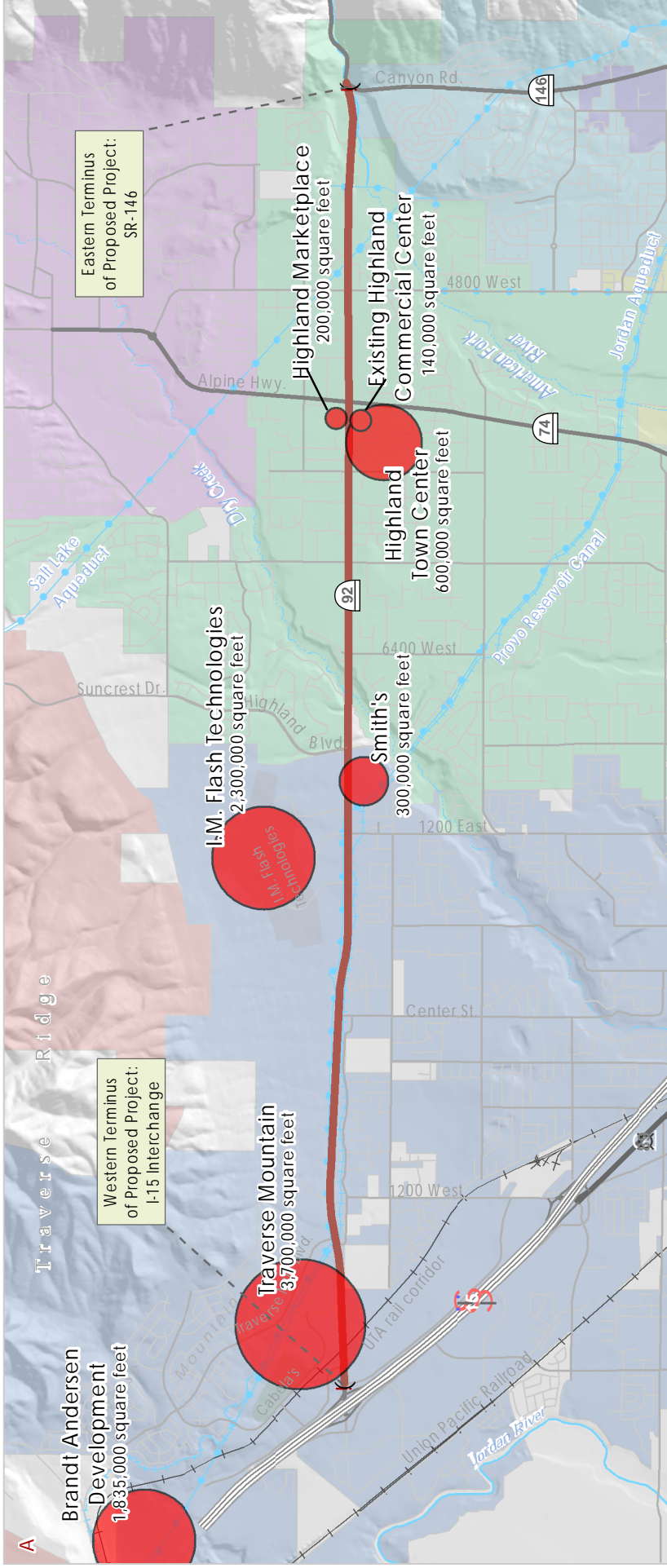
Table 3-8: Types of Businesses

Business Type	Employment Range	Number of Businesses
Home Business	1 – 4	11
Industrial	10 – 1,999	2
Medical	1 – 19	5
Other Commercial	1 – 19	8
Restaurant	10 – 49	4
Retail	5 – 499	16

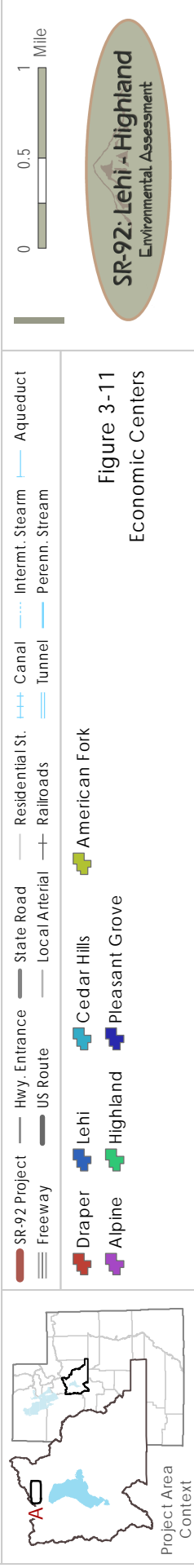
Source: Department of Workforce Services

Planned developments within the study area include the Highland Town Center—a commercial area that will expand on an existing commercial area near SR-92 and SR-74—and a grocery-anchored, retail center planned along SR-92 in Lehi.

Two residential and commercial developments, Traverse Mountain and Brandt Anderson, are planned for land outside of the 500-foot wide corridor but would likely contribute to the economic conditions of the project. The Traverse Mountain development, located northeast of the I-15 and SR-92 interchange, will provide 8,000 new homes and 3.7 million square feet of commercial and retail space. The Brandt Anderson development, which neighbors the Traverse Mountain development to the north, will include a new minor league basketball arena as well as a residential development and a hotel. Figure 3-11 shows the major existing and planned economic centers for the study area.



Source: Brandt Andersen Development Concept Plan, Traverse Mountain Concept Plan, Smith's Development Plan, Highland City Planning Commission meeting minutes, Highland Town Center Design Guidelines, Highland City Draft General Plan



Economic Plans

Within each of their general plans, Highland, Lehi, and Cedar Hills define economic development goals that focus on encouraging economic growth. An example of these goals can be found in Lehi's general plan: maximizing the diversity of employment opportunities and improving the availability and accessibility of consumer goods and services.

The economic development goals developed by these cities are part of a larger, regional strategy, which is evidenced by Mountainland Association of Governments' (MAG's) economic development district (EDD). This EDD, which includes all of the study area, has adopted a comprehensive economic development strategy (CEDS) that is consistent with the economic development goals of Highland, Lehi, and Cedar Hills. Several strategies from the CEDS are summarized below.

- Maintain demographic and economic data
- Maintain eligibility for local governments to participate in grant funding
- Provide technical assistance to local governments regarding economic development planning
- Develop the capabilities to assist local governments in economic development

Impacts

No-Build Alternative

According to the projected level of service (LOS) data described in Chapter 1 and 2 of this document, congestion along SR-92 would continue to increase under the No-Build Alternative. This increased congestion would lengthen travel time for motorists on SR-92, and, as a result, many customers would travel to another more convenient commercial center to avoid spending time on a congested highway. This congestion will likely result in a negative impact to sales for local businesses along the SR-92 corridor.

Preferred Alternative

Direct impacts are directly caused by the project and occur at the time when the project is taking place. For example, new construction employment may generate positive economic impacts for the study area while disruptions to businesses during construction activity may cause negative direct impacts.

The increase of construction employment can be predicted from the Preferred Alternative's estimated total project cost. Generally, 35 percent of the project's total value comes from labor costs. Based on wage data collected from the Department of Workforce Services (DWS) and benefits information collected from the U.S. Chamber of Commerce, it is assumed that the average cost of a construction employee with benefits in Utah County is \$53,649 (DWS 2006; U.S. Chamber of Commerce, no date). Using these assumptions, the total cost of construction employment has been estimated and is provided in Table 3-9.

Table 3-9: Estimated Construction Labor and Wages

Alternative	Total Project Cost	Estimated Labor Wages, Taxes, and Benefits	Estimated Number of Years of Employment
No-Build	\$0	\$0	0
Preferred	\$250,000,000	\$87,500,000	1,631

In addition, the construction activity would generate expenditures in the local area; construction employees would contribute to the local economy by purchasing items—such as food, gasoline, and road construction materials (if available locally)—at local shops. Assuming workers will make 80 percent of their convenience and fast food purchases and 20 percent of their general merchandise and other food purchases in the immediate area, it is estimated that \$762 will be spent annually in the local area by each worker. Total spending by workers would amount to approximately \$1.24 million over the course of the project.

Table 3-10: Estimated Construction Worker Spending in Study Area

Alternative	Estimated Number of Years of Employment	Estimated Amount Spent Per Worker	Estimated Total Local Spending by Construction Workers
No-Build	0	\$0	\$0
Preferred	1,631	\$762.31	\$1,243,328

Another direct impact that a project may have on its surrounding community is the disruption of business activity during construction. This disruption can be caused by changes in parking accommodations and access. However, it is important to note that the right-of-way expansion planned for the Preferred Alternative will not eliminate any existing parking accommodations for businesses along SR-92. Additionally, no business accesses, other than two IM Flash accesses, will be eliminated, reduced in size, or reduced in capacity as a result of the Preferred Alternative's construction. The two altered IM Flash accesses will be combined into one improved access.

This disruption in business activity during construction can result in economic impacts. Potential economic impacts resulting from construction would consist of reduced sales and/or loss of business as a result of the inconvenience to traveling motorists, the restricted access to adjoining properties, the utility disruption, the safety, and/or the unsightly appearance of construction activities in the area.

Research shows that sales may decline from 15 to 30 percent, depending on various factors that include the nature of the business, the length of construction time, and the alternate access routes to the business. According to a 2003 report that detailed the impacts of the 400 South Light Rail project, business sales declined by seven percent during the project's 16-month construction (W.A. Knowles Company 2003).

If businesses in the study area experience a loss of sales during construction, the municipalities in the area will also experience a loss of sales tax revenues. It is estimated that if sales decline by five to ten percent for a 12-month period, the estimated loss in sales could be between \$4.0 and \$7.9 million.

Indirect impacts are impacts that are not directly related to the construction of the project but are caused by the project's existence. This can include an increase and/or decrease in development or business activity resulting from the proposed roadway improvements. It can also include any fiscal effects experienced by the local government. However, it was projected that motorists along SR-92 would experience travel time savings under the Preferred Alternative. This improved travel time may likely increase the market for businesses because improved travel time would encourage more motorists to use SR-92; this increase in traffic volume would provide more exposure for businesses.